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ABSTRACT

An examination of 1002 curriculum documents (selected from the 1969 exhibit at the National Conference of the Association for Supervision and Curriculum Development) was made to provide the beginning of a pool of empirical data that can serve as a base for descriptive generalizations about curriculum design and engineering. Ten design characteristics were identified: type of binding, statements of goals, recorded history of production of materials, instructions for use of curriculum materials, content interpretation, inclusion of instructional strategies, subject matter design, evaluation scheme, number of pages, and feedback correction provisions. Four curriculum engineering characteristics were also studied: planning arena, personnel involvement, geographic region, and grade designation. The major analysis revealed the number and percent of distribution of the 14 design characteristics within each curriculum type: general curriculum, art, business education, foreign language, health and physical education, home economics, industrial arts and vocational education, language arts, mathematics, music, science, social studies. A second analysis showed the number and percentage of the distribution of the 14 design characteristics within each of the four curriculum engineering characteristics. (In addition to results of the data analyses by design category and curriculum type, the document contains discussion of definitions for "curriculum" and "curriculum design.") [Not available in hardcopy due to marginal legibility of original document.] (JS)

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AN EMPIRICAL ANALYSIS OF CURRICULUM DESIGN

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PREFACE

Each year the National Conference of the Association for Supervision and Curriculum Development sponsors an exhibit of curriculum materials. Normally, individuals from the locale in which the conference is held take the responsibility for assembling and displaying materials. For the 1969 conference, the authors were part of such a committee.

Ultimately, we dealt with approximately 1500 items of curriculum media. Our first task was to prepare the manuscript for Curriculum Materials 1969. In order to do this, it was necessary to categorize the variety of materials with which we dealt. Great variety in the materials that were submitted indicated to us considerable variety in the interpretation of precisely what elements constituted a curriculum.

As a basis for our work, we postulated that one of the areas of curriculum as a field of study is curriculum design. Moreover, we observed that the phrase "design" is used carelessly. In 1967, the ASCD appointed a Commission and charged it with the task of defining the nature of design. As yet, the Commission has not reported. In the interests of precision and definition, however, we have fashioned from the materials a composite statement of curriculum design. We fashioned our definition from the curricula submitted for the 1969 Conference.

This publication is our statement of that composite; we hope that it will advance both the clarity of definitions and the conceptions required for a more systematic understanding of curriculum.

RATIONALE FOR THIS STUDY

We believed that an examination of the characteristics of curriculum design would reveal the conceptions of curriculum held by curriculum planners. We began by accepting the curriculum types used by The Association for Supervision and Curriculum Development in publishing notice of curriculum materials exhibited at its national convention. We thus ended up with a general curriculum type plus eleven individual subject types.

Our next task was to identify important categories of document characteristics that might be classified as design features. Preliminary examination of the curriculum materials done for purposes of preparing Curriculum Materials, 1969 led us to ten that appeared would cover most of the material to be examined in detail. They were: (1) type of binding, (2) statements of goals, (3) recorded history of production of materials, (4) instructions for use of the curriculum materials, (5) content interpretation, (6) inclusion of instructional strategies, (7) subject matter design, (8) evaluation scheme, (9) number of pages, and (10) feedback correction provisions. In addition to the above categories, we included four others having to do with curriculum engineering. They were: (1) the area within which the curriculum planning was accomplished, (2) the involvement of persons in the curriculum planning, (3) the geographic region from whence the materials came, and the grade designations of the various documents.

Our primary objectives were to identify design characteristics and to find quantitative expression of those characteristics within the various types of curriculum materials examined. Both central tendencies and extremes in characteristics used were of concern.

THE ISSUES IN CURRICULUM DESIGN

Authors of curriculum books have frequently discussed under the subject of curriculum design such curriculum types as the separate subjects curriculum, the correlated curriculum, the core curriculum, the integrated curriculum, the experience curriculum, and so forth. Description and argument about these types no longer appear accept in an historical sense. All of them with the exception of the separate subjects curriculum, and a few core programs, are virtualy nonexistent. The others cannot be considered as design issues at the present time unless someone reactivates them or provides more positive evidence of contemporary use. There is no need for elaborate description of the above curriculum types here since it may be found in most any conventional textbook on curriculum development.

Curriculum Definitions

The source of the greatest issue in curriculum design is the set of associations one makes with the term "curriculum." Our professional literature is replete with many uses of associative terms such as curriculum planning, curriculum design, curriculum innovation and curriculum guides, to mention just a few. The important point is that all uses tend to hinge upon what one thinks of as a basic referent when he uses the word "curriculum." Seemingly, there are at least three distinctly different basic referents for curriculum that may be gleaned from the literature: (1) curriculum is interpreted as a plan for subsequent action, (2) curriculum and instruction are treated as a single notion when the word curriculum alone is used, and (3) curriculum is interpreted as what happens as a result of planning and

instruction. A brief discussion of each of these is in order since much of the character of the remainder of this report is related to these interpretations.

Curriculum as a plan for subsequent action. When curriculum is thought of as a plan for subsequent action, the intended subsequent action is instruction. In most cases the plan is assumed to be in written form. The intended characteristics of the written form may vary considerably. For example, a plan may be created for an entire school encompassing all subjects. In other cases, the plan may cover a single subject for any given range of the school ladder. Because the plan is created in anticipation of instruction, the internal characteristics are dependent upon the felt needs of the planners for guidance in their impending instructional acts. Thus, the plan may contain such ingredients as statements of objectives, content outlines, proposed student activities, or instructional materials. Which ingredients are included are a reflection of the purposes and uses intended for the plan.

Curriculum and instruction as a single notion. A significant number of curriculum authorities behave as if curriculum and instruction were a single word, or concept. For them, educational experiences of pupils are the primary ingredient of curriculum, but the domain of instruction is the theater in which the experiences are experienced. Curriculum encompasses plans as discussed in the paragraph above, plus individual teacher-made plans for instruction with specific groups of pupils, plus the acts of carrying out those plans with the pupils in the classroom. It obviously is impossible to conceive of a document or a plan that would encompass the full scope of curriculum in this sense; therefore, terms need to be created for any plan that is intended as a guide for instruction. Such terms as curriculum guide, content outline,

course of study, scope and sequence charts, and instructional guide have been used for this purpose.

Curriculum as a result of planning and instruction. A few curriculum authorities take an even broader view of curriculum than do those referred to in the paragraph above. Curriculum is used as a very broad term to include the psychological processes of the learner as he acquires educational experiences. In a sense, proponents of this interpretation of curriculum subsume instruction, learning, and perhaps evaluation within the concept of curriculum. What happens to the school pupil is so important to these authorities that they would state that each pupil has his own curriculum. Consequently, strong advocates of this posture would have to seek names other than curriculum for many of the materials published as curriculum guides and create other names for written plans. For these people, curriculum is very much an emergent thing rather than a planned organization. They fear rigidity, and assume written plans may induce it.

Design vs. Designing

Another issue in curriculum design that becomes apparent in our curriculum literature is the use of two grammatical forms of the basic word design. On the one hand, we speak of design as a noun having specific associations and meanings. On the other hand, a verb form of design is used when we speak of designing. Here, a set of processes is implied that presumeably would result in the creation of a design.

By this dual usage writers in the field of curriculum tend to perpetuate the old argument of content versus process in educational thought. Content purportedly is related to the substance of curriculum design; whereas, designing would refer to a set of processes by which a curriculum design is created. The

latter is essentially the same set of processes commonly referred to as curriculum development.

If we talk of curriculum design in a nominative sense, we need to identify associations of a physical nature with the concept. This would be to speak of a curriculum as a document, and design characteristics would identify one curriculum from another. Identifying the associations and quantitatively comparing them were two tasks we endeavored to accomplish.

Procedures

From the approximately 1500 pieces of materials submitted for the exhibit, a total of 1002 documents were selected for this study. Materials not used were in our judgment not appropriate as expressions of curriculum design. Such materials as handbooks, policy manuals, periodicals, tapes, statements of philosophy, and other materials of very limited scope were excluded.

An IBM card was made up for each of the 1002 documents. Eighteen columns with varying numbers of alternatives were punched on each card. The first four columns were used as a four digit code for designating the twelve curriculum types. Each of the remaining columns was used to record the alternatives to the fourteen design characteristics.

A program was prepared to give us two analyses of the data. The major analysis was designed to reveal the number and percent of the distribution of the fourteen design characteristics within each curriculum type. A second analysis was designed to show the number and percent of the distribution of the fourteen design characteristics within each of the four curriculum engineering or administrative characteristics: arena, involvement, region, and grade designation.

Printouts from the program were used to tabulate the data so that we could discuss them for our purposes.

RESULTS

Table I shows the number and percent of documents classified by major curriculum type. By examination of Table I it becomes obvious that the vast preponderance of the curriculum documents examined were documents dealing with individual school subjects. Only 69 of the total 1002 were general curriculums - that is, they encompassed levels of schooling such as elementary, junior high school, or senior high school. This data is good evidence that people who prepare materials of this kind believe that curriculums may be designed for a subject, a level, or an entire school. It is interesting to note the attention given to social studies, language arts, and science as measured by the number of documents within each of these types.

Table II shows the number and percent breakdown of the sub-categories within each of the major types. The sub-categories used were those that seemed to us to be the most self-evident classification for each curriculum type; hence, there is considerable variability in the sub-categories. Within some of the major types greater production is evident at the elementary school level. Witness, for example, general curriculum, language arts, music, and science, if one includes general to encompass elementary. We are forced into a larger number of sub-categories in language arts and social studies which indicates substantial diversity in curriculum effort in those fields.

TABLE I

GRAND TOTALS (Scope of Major Type)

Type	Number	Percentage of Total
General Curriculum	69	6.9
Art	29	2.9
Business Education	20	2.0
Foreign Language	21	2.1
Health, Phys. Education & Safety	77	7.7
Home Economics	21	2.1
Industrial & Vocational Ed.	74	7.4
Language Arts	195	19.4
Math	97	9.7
Music	40	4.0
Science	113	11.3
Social Studies	246	24.5
	1002	100.0

TABLE II

MAJOR AND SUB TYPES

Type	Number		Percentage	
General Curriculum		69		6.9
General	8		11	
Kindergarten-Pre School	29		43	
Elementary (K-6)	25		36	
Secondary (7-12)	7		10	
	69		100	
Art		29		2.9
General	5		17	
Elementary (K-6)	9		31	
Secondary (7-12)	15		52	
	29		100	
Business		20		2.0
Foreign Language		21		2.1
General	6		29	
French	3		14	
German	2		9	
Hebrew	1		5	
Latin	1		5	
Spanish	8		38	
	21		100	
Health, Phys. Ed. & Safety		77		7.6
General	13		17	
Health, Safety & Outdoor Ed.	18		24	
Physical Education	23		29	
Sex Education & Family	20		26	
Driver Education	3		4	
	77		100	
Home Economics		21		2.1
Industrial & Vocational Ed.		74		7.4

Table II Continued

Type	Number		Percentage	
Language Arts		195		19.5
Africa	1		.5	
General	21		10.5	
English - Secondary	46		24	
Language Arts - Elementary	33		17	
Creative Writing	22		11	
Handwriting	7		4	
Literature & Lit. Appreciation	11		5	
Oral Language & Speech	11		5	
Reading	39		20	
Spelling & Word Perception	4		3	
	195		100	
Mathematics		97		9.7
General	5		6	
Elementary (K-6)	39		40	
Secondary (7-12)	53		54	
	97		100	
Music		40		4.0
General	15		38	
Elementary (K-6)	18		45	
Secondary (7-12)	7		17	
	40		100	
Science		113		11.3
General	18		16	
Elementary	50		45	
Secondary	22		19	
Biology	7		6	
Physical Sciences	16		14	
	113		100	
Social Studies		246		24.6
African	17		7	
General	57		23	
Elementary	41		17	
Secondary	11		4	
Economics	22		9	
Geography	8		3	
Government & Ideol.	12		5	
History - American	30		12	
History - World	34		14	
Sociology	14		6	
	246		100	
		1,002		

ANALYSIS OF DATA BY DESIGN CATEGORIES AND CURRICULUM TYPE

Data analysis was first made by fourteen design categories. These data are presented in Table III in the appendix. Table III succinctly shows the percent distribution of each of the twelve curriculum types within the characteristics of each design category.

Arena

The distribution of curriculum types by arena characteristics is displayed in Table III. Table III should be read as follows. Of the classes of arena (school, district, county, state) within which the curriculum planning was accomplished, 88.4 percent of the 69 general curriculum types were prepared at the school district level, 5.8 percent were prepared at the county level, and 5.7 percent were written at the state level. Similarly, of the 29 art curriculums, 10.3 percent were developed at the individual school level, 72.4 percent were prepared at the district level, 6.9 percent were developed at the county level, and 10.3 were written at the state level. There is no need to repeat here all of the remaining entries for the arena category in Table III. Two or three comments need to be made about the distinctive features of arena sources of the curriculums reviewed. It is obvious that the vast preponderance of curriculums were prepared at the school district level. Foreign language curriculums were universally so. More science curriculum were prepared in levels other than the school district than any other curriculum type. Why curriculums are so predominantly developed at the school district level is not clear. One might speculate that the district is the source of political and financial power making curriculum planning possible. Another possibility is that school districts seek commonality in curriculums for all schools in the district. A

third possible explanation is that leadership in curriculum development tends to emanate from the districts' central staff offices.

Personnel Involvement

An indication of personnel involvement in a curriculum would be a design content feature, but who the personnel are in a planning project is also a concern of curriculum engineering. We looked for indications that a guide was mostly planned by consultants, teacher representatives from a larger group, the total staff, or a combination of the staff plus lay citizens. Of course, there were guides that contained no reference to the personnel involved.

Seventy percent of the guides reviewed were planned by teacher representatives. None of the guides was created by total staff involvement. In spite of the lip service given in curriculum literature to the desireability of involving lay citizens in curriculum decision making, we found virtually no evidence of it in practice. Only ten percent of the guides gave no indication of personnel involvement.

In our judgment, the use of teacher representatives at the level of personnel involvement is related to our previous observation that the vast majority of the guides were prepared in the school district arena. The larger the arena, the more difficult total staff involvement in curriculum planning becomes. The fact that we were observing guides prepared for separate school subjects also would lead to indications of something less than total staff utilization.

Region

The reason for including the region of origin as part of the study was to

provide an indication of the geographic sections of the nation most concerned with curriculum development as measured, of course, by the number in our sample from any given region. The region of origin certainly has no bearing upon curriculum design.

The reader will observe that a larger proportion of the guides reviewed were from the East and the Midwest. Perhaps this distribution is to be expected because of population density.

Grade Designation

The group for which a curriculum was planned was another design category used in the study. The grade designations used were an indication of the breadth of scope of students for whom the curriculum was intended. We utilized as classifications a single grade, a cluster of grades, an elementary school, a secondary school, a non-graded school, and the complete school ladder - kindergarten through twelfth grade.

From Table III, it can be noted that there were widespread differences in grade designation in the various curriculum guides. In terms of the total number of guides studied, 31.2 percent of them were prepared for a single grade, and this was the largest percentage of any of the grade designations. There was heavy emphasis in the rise of clusters of grades in the subjects Foreign Language, Home Economics, Industrial Arts, and Music. There was very light emphasis in the single-grade designation in Art, Business Education, Foreign Language, Health and Physical Education, Home Economics, Industrial Arts, and Music. General curriculum guides and Social Studies made heavy use of the single-grade designation. There is a rather even distribution between guides proposed for elementary schools and those for secondary schools. Very few

guides were proposed for Kindergarten through grade twelve in spite of the rather general acceptance in recent years that K-12 curriculum planning is a good idea.

Content Interpretation

We had difficulty with the category "content interpretation," and we run the risk of not communicating clearly to our readers the results of this portion of the study. We arranged five classifications within the category so that each was cumulative with its predecessors on the tally sheet. First, we noted guides that contained only a statement of objectives or a philosophy. In the next class we noted those that contained both a statement of objectives and a content distribution of the same sort such as a topical outline, a series of units, an arrangement of major ideas, or a scope and sequence arrangement of subject matter. In the third classification, we noted those guides that contained the first two plus a listing of instructional materials. We placed those guides in the fourth classification that contained the first three plus suggested activities for pupils to perform. In the fifth classification, we placed those that had all of the four plus more.

More than sixty-five percent of the guides reviewed contained a statement of objectives, a content arrangement, suggested materials of instruction, and performance activities for pupils. Only 2.3 percent contained only a statement of objectives.

Probably, this category has the greatest implication for curriculum design of all the categories used in the study, for it tells us more about curriculum definition as interpreted by persons who engage in the production of curriculum materials. For example, it seems very apparent that people who plan curriculums in the field do not discriminate sharply between curriculum planning and the

development of instructional materials and pupil activities which are clearly instructional in nature. But most important is the implication that curriculum design should be this inclusive and comprehensive.

Subject Matter Design

The design of the subject matter included in curriculums is a very important design feature. For this study we classified guides with respect to the design, or the format, of the subject matter into five groups. One class consisted of those guides containing specific subject or topic arrangements. A second class consisted of those guides in which the subject matter was organized by units. The third group was indicated as being arranged by processes or problems. A fourth contained some combinations of the first three. And we placed those in a final class that we were unable to tell what the subject matter design was.

The percent distribution of guides by curriculum type and design of subject matter displayed in Table III indicate almost half of the guides reviewed organized their subject matters in the form of units. Roughly, another one fourth arranged by specific subjects or topics, and the remainder fell into the other three classifications. There was excessively heavy concentration of guides utilizing unit organization in general curriculums, Foreign Language, Music, and Social Studies. Mathematics and Business Education guides were most frequently organized by specific subjects or topics.

Two dimensions of our study convince us that curriculum design today is almost exclusively subject-centered. One is that eleven of the twelve curriculum types bear separate subject titles, and the other is that subject

matters within each type tend to reflect concern for organization of the subject. We were surprised to find so little emphasis upon processes or problems in light of recent emphasis upon syntactical structures in the disciplines.

Binding

Flexible and inflexible were the two classes of binding used. We felt that the class of binding would be indicative of the degree of permanence the planners associated with the results of their planning efforts. A quick look at the total entry in the Table will indicate that there were about three curriculums with flexible bindings for every two with inflexible bindings. The greatest deviation from this generalization was apparent in the Foreign Language and Home Economics types, the Foreign Language having more flexible bindings, and the Home Economics having the least flexible bindings.

One reason that class of binding was included as a design characteristic in the study was to acquire cues as to the degree to which and the frequency with which planners intended curriculums to be changed. In our judgment, there were enough permanent (inflexible) bindings used to indicate a substantial lack of concern for imminent rapid and continuous change. The use of inflexible binding tends to inhibit a feedback and correction process that is essential if a curriculum is to remain dynamic.

Pages

The number of pages in a curriculum document is an indication of the amount of detail planners feel desirable. Almost sixty-five percent of the guides ranged from one to 101 pages in length, and 81.6 percent of them were

less than 152 pages length. Although one might expect that general guides would be more detailed (lengthy) than those for individual subjects, such was not the case to any significant degree.

Goals

The use of statements of goals as a category of curriculum design gives a highly specific interpretation of curriculum content. Certainly, it is entirely reasonable that the various contents included in a curriculum are a design feature. Basically, we use two categories. Statements of goal direction were included in the guides, or they were not. If goal statements were included, we observed whether they were stated behaviorally or non-behaviorally.

Ninety-five percent of the guides examined contained goal statements; five percent did not. Of those containing goal statements, 56.4 stated them behaviorally and 38.6 did not. It is interesting to note the high percentage of behaviorally stated goals in Business Education and Foreign Language, and the high percentage of non-behaviorally stated goals in the Social Studies guides.

In the world of practice (herein defined as those who construct curriculum guides), the inclusion of statements of goal direction is clearly a feature of curriculum design. More goals, or objectives are stated behaviorally than some other way.

Historical Statements

Roughly, sixty percent of the guides examined contained statements giving an indication of the history of the curriculum planning project; nearly forty percent did not. Not much can be said about the distribution

because of the similarity among the curriculum types. Guides for Industrial Arts, Art, and Health and Physical Education excluded historical statements more than the others. Statements were included most in the Mathematics and Language Arts Guides. Apparently, a majority of those planning curriculums do consider a historial statement of their procedures to be an important content (design) feature.

Instructions for Use

Whether or not a curriculum contains a statement giving instructions on how to use it is both a curriculum design feature and an important factor in curriculum engineering. The presence and character of a statement in the use of the document is a design consideration. What is intended to happen in a school, or schools, as directed by the statement is an engineering consideration within the curriculum system. In reviewing the guides, we first noted whether such a statement was contained in the guide or not. If the guide contained a statement, we classified it two ways. One was said to have occurred when the statement indicated that teachers generally were expected to use the guide as a point of departure for their teaching. The other was said to have occurred when the statement specifically directed teachers to follow the guide precisely. The latter restricted teacher choice of behavior more than the former.

Almost eighty-six percent of the guides reviewed contained a statement indicating intended use whereas only fourteen percent did not. Of those that did contain such a statement, all but a few intended the document to be used by teachers as a point of departure for their teaching. Only 1.9 percent intended the document to be directly followed by teachers.

There seems to be little doubt that persons who plan curriculums in the field intend that teachers will use the planned materials as a directive, or guiding, force behind their teaching. It also seems obvious that they do not intend their curriculums to be rigidly followed.

Instructional Strategy

Many of the curriculum guides reviewed contained directives or suggestions for methods of teaching; hence, a category pertaining to the inclusion of instructional strategies as a design feature was incorporated into the study. Two classifications were utilized. Instructional strategies were included in the guides, or they were not.

Seventy-three percent of the guides contained such provisions; twenty-seven percent did not. The most one-sided distribution fell within Social Studies wherein 82.5 percent of the guides included instructional strategies. The distribution within this category tends to confirm one of the implications we noted earlier - namely that people in the field conceive instructional matters as a problem, or a feature, of curriculum design.

Evaluation Scheme

Few would deny the importance of curriculum evaluation. It should follow logically that provision for curriculum evaluation would be an integral feature of curriculum design; therefore, we checked all guides for the presence of schemes for evaluating those materials. More than 85 percent did not contain anything like an evaluation scheme. Obviously, curriculum practitioners either do not consider an evaluation scheme to be a necessary feature in curriculum design, or they do not know how to build the feature into their designs.

Feedback Considered

Provisions for feedback is also an indication of concern for the evaluation process. Approximately fifteen percent of the guides made some kind of feedback provision, but 85 percent contained no reference to the process. Mathematics guides revealed more concern for feedback than any other curriculum type.

ANALYSIS OF DATA FOR EACH CURRICULUM TYPE WITHIN ALL DESIGN CATEGORIES

Data were then analyzed so that the distribution of information about all of the design categories for each curriculum type could be noted readily. These data are also included in Table III. We begin with all guides so that their distribution can serve as a comparative backdrop for the specific subject types.

All Guides

The percent distribution of the 1002 guides used in this study within each of the design categories indicates that the vast majority of the guides (82.8%) were produced at the district level. Seventy percent of the guides were planned by teacher representatives. Surprisingly, none were produced by total staff involvement as near as we could tell, although a few (1.2%) involved the staff and lay citizens. Most of the guides came from the East (37.4%) and the Midwest (32.5%), and most of them were intended for a single grade (31.2%) or a cluster of grades (28.2%).

The overall content characteristics of the guides are interesting in that the features we chose for this study were clearly present or they were not. Ninety-five percent of the guides reviewed contained goal statements. Of these 56.4 percent were behaviorally stated. We were surprised to find that 61.5 percent of them contained historical records of the planning efforts. The fact that 83.9 percent of the guides indicated that teachers were to use them as points of departure for their teaching is a distinct indication of a desire for curriculum materials to be used as flexible guides for instruction rather than a rigid demand for conformity.

Seventy-three percent of the guides included instructional strategies

which leads to the conclusion that the planners felt instructional matters were important content for a curriculum. It is very clear that curriculum planners did not feel that it was important to include in a curriculum document an evaluation scheme or a plan for obtaining feedback from practice for curriculum revision. Approximately 85 percent of the 1002 guides failed to provide for either. We cannot say that such schemes and procedures do not exist in the school systems which produced the guides, but there is no evidence of it in the guides themselves.

We included in the study the category of "content interpretation" to analyze the degree to which some or all of the characteristics described in the preceeding paragraph were included in the guides. Only 2.3 percent of the guides contained only statements of goals or objectives, but 65.7 percent of them contained statements of objectives, arrangements of subject matter, suggested instructional materials, and suggested pupil activities. Clearly, most curriculum planners feel that their products must include more than goals and subject matter arrangements.

When we looked at the design of the subject matter, we found that the unit form of organization was used in 47 percent of the cases. Specific subject topics were used in 26.8 percent of the guides. In light of emphasis upon syntactics in recent years, we were surprised to note that only 18.2 percent of the guides contained subject matter organization based upon processes and problems.

Roughly, sixty percent of the guides were in flexible bindings. The guides were not large as evidenced by the fact that 32.9 percent of them were fifty pages or less. Another 3.16 percent ranged from 51 to 101 pages.

In describing design categories for each subject in the following paragraphs, we will use the distribution of all guides as a model and concentrate only on distinct deviations from it. We will try to refrain from speculative comments about reasons for the observed differences because they would be just that. We have no data to account for them.

General Curriculum Guides

In nearly all respects, the general curriculum guides corresponded with all the guides in the distribution within the design categories. We call attention only to two differences, and they do not appear to be very important. More of the general guides (46.4%) were designed for a single grade, and they were slightly larger as evidenced by the fact that 21.7 percent of them contained between 102 and 152 pages.

Art Guides

The percent distribution of the 29 Art guides within each of the design categories indicates they deviated notably from all guides with respect to grade designation, the inclusion of an historical record, content arrangements, and size. Only 3.4 percent of the Art guides were designed for single grades, 31 percent for clusters of grades, 24.1 percent for elementary schools, and 20.7 percent for secondary schools. Less than half of these guides (41.4%) contained historical statements. There was a greater variety of contents in the Art guides, and they all utilized subject topics or units as subject matter design. More than eighty percent were less than 102 pages in length.

Business Education Guides

The percent distribution of the twenty Business Education guides within

each of the design categories indicates that with respect to several of the design categories, the Business Education guides reached extremes. To what extent those extremes are attributable to either the small number of guides or the nature of Business Education is not known. For example, sixty percent of the guides originated in the East. Ninety-five percent of them were for secondary schools.

In the content categories, one hundred percent stated their goals behaviorally. Only forty percent contained historical statements, and none contained either evaluation schemes or feedback provisions. Ninety-five percent of them contained subject matter organized by specific topics.

Business Education guides tended to be smaller since fifty percent of them contained less than 51 pages.

Foreign Language Guides

Like Business Education guides, the 21 Foreign Language guides deviated considerably from the total guides with respect to the design categories. In the engineering categories, one hundred percent of the guides were planned at the district level. Most of them (57.1%) came from school districts in the East, and singularly, 38.1 percent of them came from the Southwest. Almost seventy percent of the guides were planned for clusters of grades.

A small proportion (42.9%) of the Foreign Language guides than in the case of all guides contained an historical record. A very high percent (81%) of the guides contained suggested activities, plus materials, subjects, and objectives. Unit organization of subject matter was utilized in 85.7 percent of the guides. Only 28.6 percent of them had flexible bindings.

Health, Physical Education, and Safety Guides

A few noticeable differences were identified between the distribution of design category data for all guides and those for the 77 Health, Physical Education, and Safety guides.

Two comments should be made about the distribution within the engineering categories. Of all types of guides examined, including the total, the fewest (54.5%) were constructed by teacher representatives. More (35.1%) were planned by consultants. Grade designations were more widely and evenly distributed among the possible designations.

Three items should be noticed about the content categories. Only 44.2 percent of the guides contained historical records. Among the possible instructions for use, only 75.3 percent of the guide planners intended that teachers use the guides as points of departure for their teaching. Approximately twenty percent gave no indication of intended use. In 22.1 percent of the guides of this type was the subject matter organized by units. This was the lowest percent in this characteristic of any of the types reviewed.

Home Economics Guides

The percent distribution of the 21 Home Economics guides within each of the design categories in Table III indicates that 42.9 percent of them came from the Midwest and only 14.3 percent from the East. More than sixty percent of them were designed for clusters of grades.

The Home Economics guides had the distinction of having evaluation schemes included in one-third of them. Only 23.8 percent of the guides had the subject matter organized by units, but 42.9 percent were organized by specific topics and one-third by processes and/or problems.

More (81.0%) of the Home Economics guides were flexibly bound than any other curriculum type.

Industrial Arts and Vocational Education Guides

The 74 curriculum guides in the areas of Industrial Arts and Vocational Education tended to resemble the pattern established by all of the guides analyzed. Two exceptions should be noted. A large proportion (67.6%) of the guides were intended for clusters of grades and 10.8 percent for a single grade. Only 37.8 percent of the guides contained historical records.

Language Arts Guides

The 195 Language Arts guides compared very well in design category distribution with all guides. Two categories warrant comment. More (85.1%) Language Arts guides were planned by teacher representatives than any other curriculum type. There was more even distribution among the guides designed for single grades, clusters of grades, elementary schools, and secondary schools.

Mathematics Guides

The percent distribution of the 97 Mathematics guides within each of the design categories indicates that, for the most part, the category distribution of the Mathematics guides tended to correspond with all guides.

The most distinctive exception of this correspondence was the fact that 38.1 percent of the Mathematics guides provided for feedback from experience with using the guides. This was the highest proportion for all types analyzed.

Of all guide types, the mathematics guides utilized unit organization the least (5.2%). Specific subjects were used 84.4 percent of the time.

Less attention was paid to materials and activities and more to subject topics and objectives.

Music Guides

An unusual proportion (47.5%) of the 40 Music guides were from the Midwest. Few of the guides were designed for single grades, but seventy percent of them were either for cluster of grades or for elementary schools. Eighty percent of the Music materials made use of the unit type or organization. The guides tended to be small as evidenced by the fact that over eighty percent of them contained less than 102 pages.

Science Guides

The 113 Science guides were very similar to all guides with respect to distribution within the design categories. Fewer (65.5%) were planned at the district level that in the case of any other type. More were planned at the school and state levels. Almost fifty percent of the Science guides originated in the East, and another 23 percent in the Midwest, leaving only one fourth of them to originate from the remainder of the country.

Social Studies Guides

Several interesting deviations from all guides were noted for the 246 Social Studies guides. Fifty-two percent of them came from areas in the East, and 51.2 percent of them were designed for single grades.

Goals tended to be stated non-behaviorally; only 26.4 percent of the guides contained behaviorally stated goals. More Social Studies guides (82.5%) included instructional strategies as part of their design than any other type.

SUMMARY

An examination of 1002 curriculum documents was made in an effort to provide the beginning of a pool of empirical data that can serve as a base for descriptive generalizations about curriculum design and engineering. The lack of confidence in the sample being representative prohibits us at this time from inferring strong generalizations. When more data are analyzed in similar manners generalizations will be warranted. Such generalizations can lead to theory building and the generation of propositions and hypotheses to be tested.

APPENDIX A

TABLE III

PERCENT DISTRIBUTION OF GUIDES BY TYPE BY CATEGORY

	Curriculum Type												
CATEGORY	ALL	GEN	ART	BE	FL	HPES	HE	IAVE	LA	MATH	MU	SCI	SS
ARENA													
School	4.9	0.0	10.3	10.0	0.0	1.3	0.0	8.1	3.1	4.1	12.2	11.5	3.7
District	82.8	88.4	72.4	70.0	100.0	79.2	76.2	90.5	88.2	81.4	80.0	65.5	86.2
County	4.7	5.8	6.9	0.0	0.0	16.9	9.5	0.0	3.1	8.2	0.0	7.1	1.6
State	7.6	5.7	10.3	20.0	0.0	2.6	14.3	1.4	5.6	6.2	7.5	15.9	8.5
PERSONNEL INVOLVEMENT													
Consultants	18.5	13.0	20.7	30.0	19.0	35.1	14.3	29.7	10.3	12.4	17.5	27.4	15.
Teacher Representatives	70.0	76.8	65.5	60.0	81.0	54.5	76.2	67.6	85.1	71.1	80.0	68.1	60.
Total Staff	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
Lay and Staff	1.2	0.0	0.0	10.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	2.
No Indication	10.3	10.1	13.8	0.0	0.0	6.5	9.5	2.7	4.6	16.5	2.5	4.4	21.
REGION													
East	37.4	27.5	24.1	60.0	57.1	26.0	14.3	24.3	30.8	35.1	15.0	49.6	52.
Midwest	32.5	44.9	10.3	0.0	0.0	5.2	9.5	9.5	5.6	4.1	5.0	8.8	5.
West	12.1	10.1	34.5	20.0	4.8	46.8	42.9	39.2	33.3	33.0	47.5	23.0	26.0
Southwest	9.7	5.8	6.9	15.0	38.1	6.5	19.0	5.4	12.3	20.6	12.5	8.8	3.
South	6.3	8.8	20.7	5.0	0.0	11.7	14.3	16.2	15.9	6.2	20.0	8.0	11.
No Indication	2.0	2.9	3.4	0.0	0.0	3.9	0.0	5.4	2.1	1.0	0.0	1.8	1.

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	Curriculum Type												
CATEGORY	ALL	CEN	ART	BE	FL	HPES	HE	IAVE	LA	MATH	MU	SCI	SS
BINDING													
Flexible	59.5	68.1	55.2	45.0	28.6	48.1	81.0	45.9	69.2	49.5	65.0	58.4	63.0
Inflexible	40.5	31.9	44.8	55.0	71.4	51.9	19.0	54.1	30.8	50.5	35.0	41.6	37.0
PAGES													
1-50	32.9	26.2	51.7	50.0	23.8	31.2	9.5	31.1	25.1	35.1	52.5	31.9	37.8
51-101	31.6	21.7	31.0	15.0	38.1	19.5	47.6	24.3	43.6	26.8	30.0	33.6	31.7
102-152	17.1	21.7	6.9	30.0	28.6	20.8	14.3	36.5	13.3	15.5	12.5	11.5	15.0
153-203	8.3	13.0	3.4	0.0	0.0	18.2	9.5	4.1	7.2	8.2	2.5	8.8	8.5
204-254	4.0	5.8	0.0	5.0	0.0	3.9	4.8	1.4	3.6	5.2	2.5	6.2	4.1
255-305	2.3	5.8	0.0	0.0	0.0	3.9	14.3	2.7	2.1	0.0	0.0	4.4	0.8
306 or More	3.8	5.8	6.9	0.0	9.5	2.6	0.0	0.0	5.1	9.3	0.0	3.5	2.0
GOALS													
Behavioral	56.4	60.0	62.1	100.0	85.7	71.4	66.7	71.6	64.6	63.9	65.0	58.4	26.4
Non-Behavioral	38.6	36.2	37.9	0.0	14.3	22.1	33.3	27.0	34.9	21.6	22.5	23.9	72.8
None	5.0	2.9	0.0	0.0	0.0	6.5	0.0	1.4	0.5	14.4	12.5	12.5	0.8
HISTORICAL STATEMENTS													
Included	61.5	69.6	41.4	40.0	42.9	44.2	57.1	37.8	73.8	87.6	52.5	59.3	60.2
Not Included	38.5	30.4	58.6	60.0	57.1	55.8	42.9	62.2	26.2	12.4	47.5	40.7	39.8

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CATEGORY	ALL	GEN	ART	BE	FL	HPES	HE	IAVE	LA	MATH	MU	SCI	SS
GRADE DESIGNATION													
Single grade	31.2	46.4	3.4	0.0	4.8	7.8	9.5	10.8	28.7	35.1	5.0	39.8	51.2
Cluster	28.2	27.5	31.0	5.0	61.9	27.3	61.9	67.6	18.5	27.8	45.0	30.1	17.1
Elementary (K-6)	12.9	13.0	24.1	0.0	9.5	23.4	0.0	0.0	17.4	16.5	25.0	10.6	8.5
Secondary (7-12)	15.3	4.3	20.7	95.0	19.0	23.4	23.8	16.2	23.6	14.4	5.0	3.5	8.1
Non-graded	6.3	5.8	3.4	0.0	4.8	1.3	4.8	4.1	6.7	4.1	5.0	8.8	10.2
K-12	6.1	5.8	17.2	0.0	0.0	16.9	0.0	1.4	5.1	2.1	15.0	7.1	4.9
CONTENT INTERPRETATION													
Obj. or Phil. only	2.3	2.9	3.4	0.0	0.0	1.3	0.0	1.4	5.6	2.1	0.0	0.0	2.0
Subjects and Above	10.3	13.0	10.3	0.0	19.0	15.6	14.3	0.0	6.7	21.6	15.0	9.7	8.5
Materials and Above	13.1	8.7	17.1	10.0	0.0	15.6	28.6	32.4	12.8	3.1	30.0	13.3	8.5
Activities and Above	65.7	55.1	44.8	90.0	81.0	62.3	42.9	64.9	67.7	42.3	47.5	74.3	77.6
More than above	8.7	20.3	24.1	0.0	0.0	5.2	14.3	1.4	7.2	30.9	7.5	2.7	3.3
SUBJECT MATTER DESIGN													
Specific Subject Topics	26.8	14.5	48.3	55.0	4.8	31.2	42.9	23.0	19.5	81.4	7.5	21.2	15.9
Units	44.5	56.5	51.7	30.0	85.7	22.1	23.8	48.6	41.0	5.2	77.5	40.7	60.2
Processes/Problems	18.2	17.4	0.0	5.0	0.0	23.4	33.3	13.5	27.2	5.2	5.0	34.5	14.2
Combination	8.0	10.1	0.0	10.0	9.5	20.8	0.0	14.9	5.1	5.2	7.5	2.7	8.5
Cannot Tell	2.5	1.4	0.0	0.0	0.0	2.6	0.0	0.0	7.2	3.1	2.5	0.9	1.2

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	Curriculum Type												
CATEGORY	ALL	GEN	ART	BE	FL	HPES	HE	IAVE	LA	MATH	MU	SCI	SS
INSTRUCTIONS FOR USE													
Point of Departure	83.9	84.1	79.3	90.0	95.2	75.3	90.5	93.2	89.7	80.4	75.0	76.6	82.5
Direct Follow	1.9	2.9	0.0	10.0	0.0	5.2	0.0	0.0	2.6	2.1	0.0	0.9	1.2
None	14.2	13.0	20.7	0.0	4.8	19.5	4.8	6.8	7.7	17.5	25.0	19.5	16.3
INSTRUCTIONAL STRATEGY													
Included	73.0	73.9	65.5	60.0	66.7	75.3	66.7	67.7	74.4	68.0	52.5	69.0	82.
Not included	27.0	26.1	34.5	40.0	33.3	24.7	33.3	32.4	25.6	32.0	47.5	31.0	17.
EVALUATION SCHEME													
Included	14.9	13.0	6.9	0.0	14.3	14.3	33.3	6.8	18.5	23.7	5.0	18.6	12
Not Included	85.1	87.0	93.1	100.0	85.7	66.7	93.2	93.2	81.5	76.3	95.0	81.4	87.
FEEDBACK CONSIDERED													
Yes	15.3	20.3	10.3	0.0	14.3	6.5	19.0	14.9	9.2	38.1	2.5	14.2	17.
No	84.7	79.7	89.7	100.0	85.7	93.5	81.0	85.1	90.8	61.9	97.5	85.8	82.